

Clinging to Nuclear Energy is a Reckless Denial of Reality

by Rudi Nussbaum, PhD, Former Oregon PSR Board Member

Oregon PSR reaffirms our opposition not only to nuclear weapons, but to the nuclear power industry. Besides the unacceptable lasting effects on public health, even if operating normally, nuclear energy technology cannot be adequately financed by private capital. The nuclear power industry holds citizens hostage to protect its profits, and the industry's safety claims, including the new label of "safer design," are largely a cynical hoax.

Oregon PSR's commitment to protecting public health translates into demanding the decommissioning of all currently operating nuclear plants and encouraging taxpayers to refuse to subsidize the construction of new ones with guaranteed loans and liability insurance premiums.

Why? Here is the scientific, and common sense, justification for such an uncompromising position:

Findings From Three Mile Island Systematically Ignored

After the 1979 accident at Pennsylvania's Three Mile Island (TMI) nuclear power plant, the *official* Columbia University study found no increased health effects among the surrounding population. This was consistent with the officially accepted exposure levels as estimated by the TMI plant operators, applying internationally accepted radiation risk factors derived from long term follow-up of the *externally* exposed atomic bomb survivors at Hiroshima and Nagasaki.

Contradicting these findings, [a subsequent study](#) led by Dr. Steven Wing found statistically significant excess cancers; cancers that affected the lives of real and documented persons. Wing's results, however, were angrily dismissed by the radiation establishment because "current radiological science" presumably precluded that the officially adopted low levels of population doses released from the TMI reactor, as provided by the power plant operators, could induce the observed excess cancers. The possibility that combining flawed dose estimates with flawed risk models could predict numbers that were off by several orders of magnitude (factors of ten) was never considered.

Following a tradition illustrated nearly 400 years ago by Galileo's fate, accepted beliefs and supporting theoretical models, combined with vested interests, trumped observable reality. Questioning assumptions in adopted radiobiological models and radiation risk assessments would be equivalent to heresy.

Lessons From the Chernobyl Disaster

All over the former Soviet Union, increased incidence of cancers and a multiplicity of other serious health problems associated with environmental radioactivity from the 1986

Chernobyl disaster have been documented by clinical reports and public health statistics. Until recently, the majority of these studies were only published in Russian scientific and medical journals, and those were deliberately ignored by the Western radiation health establishment.

Instead, the International Atomic Energy Agency (IAEA), the United Nation's nuclear technology promoting agency, published report after report with estimated numbers of Chernobyl radiation victims that are orders of magnitude smaller than those observed and documented in the [2009 New York Academy of Sciences compendium](#) of much of this epidemiological data in English. The World Health Organization, unfortunately, is not permitted to conduct independent studies on radiation health.

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) accepted IAEA assertions of very low numbers of radiation victims, purportedly based on the world's most reliable radiobiological and radiation risk models. Thus, mainstream radiation health scientists proclaim that the large numbers of radiation-associated health effects following the Chernobyl catastrophe "cannot" be caused by radiation, but rather must be the result of "psychosomatic traumas."

In faraway Western European countries for which UNSCEAR estimated very low fallout doses, a multitude of excess detrimental health effects including neonatal mortality, Down's syndrome and a lowering of child IQ were found following the Chernobyl explosion. There is an extensive literature of these studies. However, UNSCEAR dose estimates and accepted notions of radiobiological science deny any causal relationship between Chernobyl fallout and documented observations. Once again, vested interests and cherished theoretical models, mixed with intolerable arrogance, trump reality.

Results From Recent German Studies

Several years ago, the German government commissioned a team of prestigious government-employed health scientists to design [a state-of-the-art study](#) of children younger than 5 years old who lived in proximity to any of the 16 normally operating nuclear power reactors in that country. Presumably, the study was meant to assuage continued citizen concerns about observed childhood leukemia clusters around some of these reactors with maximum credibility. To my knowledge, it is the only government sponsored radiation study ever that was designed with full input from, and oversight by, an independent scientific commission, including several members who had publicly supported the citizens' concerns.

Contrary to their expectations, the government scientists found irrefutable evidence that for these children there exists an association between residence within 10 km of any of these reactors and a more than doubling of risk for contracting leukemia or other cancers.

This amazing finding caused quite a stir in the German media (though it remains underreported and largely unacknowledged in the U.S.), and it has never been credibly refuted.

Some defensive studies with negative outcomes around power reactors in France and England claim to have cast doubt on the German results, but critical analysis shows them to lack the requisite statistical power (i.e. sensitivity) to invalidate the German findings.

Desperate for an “out,” the government researchers, the health agencies involved and the German government then declared these excess cases of early childhood leukemia and cancers in the proximity of nuclear plants to be “inexplicable.” To initiate such malignancies, mainstream radiobiological models would require levels of radioactive emissions to be three orders of magnitude (1,000 times) larger than what the reactor operators claimed to have been released.

In fact, the officially admitted emissions ignored, for example, large releases of radioactive noble gases (e.g. krypton) and of tritium (radioactive hydrogen). The latter easily enters the liquid and solid food chain. Most importantly, the traditional measure of radiation exposure, the concept of dose (absorbed energy averaged over a unit mass of human tissue), is a *macroscopic* concept, clearly inadequate to describe a variety of injurious *microscopic* cellular/molecular mechanisms that can be triggered by radioactivity absorbed internally. In addition, officially accepted radiation risk factors do not take into account the extreme radio-sensitivity of the developing fetus and of very young children.

The Price of Ignoring the Nuclear Power Industry’s Legacy

The international radiation health science establishments, such as the IAEA and the International Commission on Radiological Protection, many of whose members are solidly enmeshed with nuclear weapons and nuclear energy production, have for decades deliberately ignored observed public health impacts from radioactive emissions. Their estimates of the public health impact from environmental radioactivity are based on partially outdated and inappropriate theoretical models developed decades ago to quantify exposures to *external* radiation, such as those suffered by the Japanese atomic bomb survivors. In agencies that are mandated to protect public health, such a mindset that denies observable reality is intolerable.

Those who deny or deceptively play down the catastrophic threats to public health from all phases of the nuclear power cycle, from mining to the permanent disposal of deadly toxic nuclear waste, recklessly ignore the medical and scientific lessons we have learned from current and previous nuclear accidents. It is particularly tragic that the people of Japan, especially those in proximity to Fukushima’s ongoing Daiichi nuclear plant disaster, are again unwilling study cohorts for the devastating effects of a very different mix of environmental radioactive contamination.

Rudi H. Nussbaum, PhD was Professor emeritus of Physics and Environmental Sciences at Portland State University and a former Oregon PSR board member. Oregon PSR is saddened by Dr. Nussbaum’s recent death on July 22nd, 2011. We will continue to work to see his vision of a world free from the gravest threats to human

health realized, and continue to have our work informed by his invaluable efforts and compassionate insight.

Read [a statement on Rudi's passing](#) by Patricia Hoover (Oregon PSR Member, Northwest Radiation Health Alliance Founding Member, and Hanford downwinder), with whom he tirelessly worked to highlight the unacceptable detrimental health effects related to nuclear radiation.